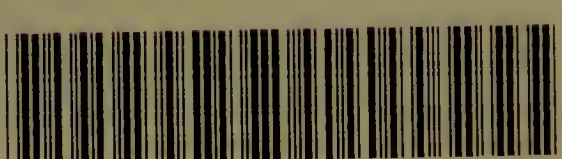
IDEAL PHYSICAL CULTURE

By

APOLLO.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IDEAL PHYSICAL CULTURE

TWO SMART STORIES.

My Lady Ruby
AND
John Basileon
CHIEF OF POLICE.

By G. F. MONKSHOOD,

Author of "Rudyard Kipling: The Man and His Work," "Woman and the Wits," etc.

Crown 8vo, Cloth, top edge Gilt, 2/6.

Outlook.—"Good work in which the influence of Mr. Saltus is perceptible. There are whole pages of admirable rhetoric. The story illustrates the enormous power of woman to excite and abase man—an old theme, but an inexhaustible one."

Sheffield Telegraph.—"A good half-crown's worth of smart, clever writing. Both stories are quite off the conventional line."

St. Paul's.—"The dialogue in 'My Lady Ruby' is crisp and distinctly good. The second story, 'John Basileon,' is very striking."

St. James' Budget.—"'My Lady Ruby' is a dainty trifle, of the genre made familiar by Anthony Hope, wittily and gracefully told. . . . 'John Basileon' is a lurid story in which the senses run riot, and in one of the chapters, 'The Glory of the God of Sex,' we have a phrase suggestive of the outlook on life of practically all the characters engaged."

Woman's Weekly.—"'My Lady Ruby,' by Mr. G. F. Monkshood, whose work on Rudyard Kipling was so much appreciated, is a dainty little study of a pair of lovers; the other stoy, 'John Basileon,' shows the author has several styles, and while a less pleasant theme, has a strength that one cannot but admire."

Liverpool Review.—"'My Lady Ruby' is a little love story told in an extremely unconventional fashion. Between the same covers is a short, lurid story of passion, called 'John Basileon,' in which the moralities are discussed in a very free and easy, and not altogether commendable, style. Still Mr. Monkshood can write."

Monitor.—"'My Lady Ruby' is charming, and as witty as she is charming. . . . 'John Basileon' evinces imagination and subtilty of a highly vivid and intense quality. The note of the book is modern, but of a modernity far removed from that of the term understood by the French Symbolists and the English Degenerates. Messrs. Greening & Co. are to be congratulated on a publication which is likely to arouse considerable attention in those literary circles from which approbation is praise indeed."

North British Daily Mail.—"The titular story—one of two—displays a lightness of touch and a deftness of construction that make its perusal a source of keen, mental stimulation, while the wit of its dialogue and the gentle and kindly humour that permeates the whole of it serve to increase and intensify the intellectual exhiliration, which every cultured man who reads it, must feel. . . . The second tale, 'John Basileon,' is of a different stamp. The language is strong, and its suggestion even stronger, and it displays a real power over the emotional states, and an insight into the psychology of a man's love, seldom arrived at by writers of fiction."

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IDEAL PHYSICAL CULTURE

AND

The Truth About The Strong Man

BY

APOLLO

(WILLIAM BANKIER)

FOURTH EDITION

London
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1900

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INTRODUCTORY

ACTUATED by a loyal, patrotic conviction that no nation in the world can excel in bone and muscle our own countrymen, I feel sure my readers will understand my desire to give publicity to the following circumstances.

Feeling strong on this subject, at a time when Mr. Sandow was deservedly popular with the public, I prepared myself

for competition, and when ready issued the following challenge :—

TO THE EDITOR OF THE "EVENING TIMES."

GLASGOW, *March 6th*, 1899,

Sir,

I hereby challenge Sandow to a contest of strength for £100 a side, for which I send £25 now to show I mean business : the contest to consist of weight-lifting from the ground—six feats each—one of the feats to be a lift in harness, all one-handed work to be performed from the floor to the shoulder. If Mr. Sandow refuses to meet me on these terms, I hereby challenge him to an all-round athletic contest, consisting of weight-lifting, wrestling, (catch-as-catch-can style) running a one-

mile race, and jumping with 56 lb. weights, for £100 a side, the winner of three events out of four to be adjudged the conqueror. This is no bombastic challenge, but simply from a desire to prove to the public that there are better athletes in Britain than ever came from Germany. I hope to hear from Sandow per return, and remain,

Yours strongly,

APOLLO

(The Scottish Hercules.)

To this I received no reply, although it appeared in the Glasgow papers every evening during Sandow's engagement in that city. I did not, as others have done, send the challenge when Sandow was many miles away, but waited until he was

in my own city, and I deposited the money at the time of making the challenge.

I leave the issue to my readers : and feel certain that many will think with me, that in matters of genuine physical strength, *i.e.*, a combination of pulling and pushing muscles, there are many men in this country who, with a little preparation, could exceed in the aggregate anything Mr. Sandow has shown us.

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GREAT ATHLETES AND THEIR FEATS

From the earliest times of which we have any knowledge, strength has always had a fascination for the human race. Tradition and fable alike teem with records of wonderful things that great giants of olden times have done. Milo of Crotona is credited with numberless marvels. Of him Lempriere says :—

"Milo, a celebrated athlete of Crotona in Italy. His father's name was Diotimus. He early accustomed himself to carry the greatest burdens, and by degrees became a monster in strength. It is said that he carried on his shoulders a young bullock, four years old, for above forty

yards, and afterwards killed it with one blow of his fist, and ate it up in one day. He was seven times crowned at the Pythian games, and six times at Olympia. He presented himself a seventh time, but no one had the courage or boldness to enter the lists against him. He was one of the disciples of Pythagoras, and to his uncommon strength the learned preceptor and his pupils owed their lives. The pillar which supported the roof of the school suddenly gave way, but Milo supported the whole weight of the building, and gave the philosopher and his auditors time to escape. In his old age, Milo attempted to pull up a tree by the roots and break it. He partly effected it, but his strength being gradually exhausted, the tree when half cleft re-united, and his hands remained pinched in the body of the tree. He was then alone, and being unable to disentangle himself he was eaten up by the wild beasts

of the place, about 300 years before the Christian era."

Pliny tells of one Athanatus, who walked across the stage loaded with a breastplate weighing 500 lbs., and buskins of the same weight.

But of all the men of prodigious strength of whom we have any account in history, Maximinus, the Emperor of Rome, is to be reckoned foremost. He was by birth a Thracian, and a simple herdsman. He was nearly nine feet in height, and was said to be the best proportioned man in the empire. He used the bracelet of his wife as a ring for his thumb. In the theatre, in the presence of all the citizens, he overthrew twelve of the strongest men in wrestling, and outstripped two of the swiftest horses in running, all in one day. He could draw a loaded chariot which two strong horses could not move. He could break a horse's jaw with a blow of his fist

and its ribs with a kick. This giant gradually rose through all the gradations of office till he came to be Emperor. He reigned for some years, hated by everybody, but so feared on account of his brutality and his physical strength that no one dared to put him to death. He conspired against Alexander Severus, and caused him to be murdered in his tent. He also put to death a Roman senator, with four thousand other persons, for an alleged conspiracy. Finally the soldiers mutinied and killed him, A.D. 238.

Fumios, a native of Selencia, who was executed by the Emperor Aurelian for espousing the cause of Zenobia, was celebrated for his strength. It is said that he could suffer iron to be forged upon an anvil which was placed upon his breast. This he did by forming an arch with his body, his arms and legs being the four pillars. This feat is a very common one among

strong men of the present day, some of whom, I believe, claim to be originators of it.

Amongst all branches of athletics, feats of strength even with the ancients seem to have been little understood, and consequently the performers had every chance of exaggerating them. This is still the case. John Middleton, a Lancashire man, who lived in 1578, was remarkable for his great stature and strength. His hand was 17ins. long, and he was 9ft. 3ins. in height. In the 18th century an English miner, whose finger was caught in a chain at the bottom of a mine, supported the whole weight of his body by keeping that finger forcibly bent, until by that means he was drawn to the surface, a height of 600 ft. His weight was 150 lbs.

I only know of one man who can raise the entire weight of his body (10 st.) by the aid of one finger, and that is Mr. A. Alexander, (Principal of the Southport

Physical Training College, and until quite recently Director of the Liverpool Gymnasium). Mr. Alexander not only performs this *voluntarily*, a couple of times in succession—a fact well known to present day professors of gymnastics—but also performs the still more extraordinary feat of raising his body into the horizontal position known as "La Planche" by the aid of one finger alone. This has never been equalled, and I am quite sure that Mr. Sandow is not able to perform the same feat with one *hand*, let alone one finger.

About the year 1803, one Joyce, a native of Kent, exhibited such feats of strength in London that he was popularly known as the second Samson. His own individual strength was enormous, but he also discovered several positions of the body in which men of even ordinary strength could perform very surprising feats. He drew

against horses, raised tremendous weights, and exhibited for eight or ten years with great success ; but his methods were eventually discovered, and many imitators of quite ordinary strength sprang up and performed a number of his principal feats.

A German, named Eckeberg, travelled through Europe in the early days of last century under the appellation of " Samson," which name is still a favourite for strong men. He was of medium proportions, but by certain methods and devices was able to perform extraordinary feats. He was elevated on a framework, and a rope fastened to a scale which hung below was attached to his girdle, a heavy cannon rest- on the scale which lay upon rollers on the floor. When all was ready the rollers were knocked away, and the cannon remained supported by the strength of his loins. This feat depended entirely upon

the natural strength of the bones of the pelvis, which form a double arch, requiring an immense force to break it by any external pressure directed to the centre of the arch; and as the legs and thighs are capable of sustaining 4,000 or 5,000 lbs. when they stand quite upright, the performer has no difficulty in resisting the force of two horses, or in sustaining the weight of a cannon weighing 2,000 or 3,000 lbs. The anvil trick, while very surprising, consists alone in sustaining the anvil. When this is done, the effect of the hammer is as nothing. The heavier the anvil the less the blow is felt.

A very wonderful man named Thomas Topham exhibited some marvellous feats of real and extraordinary strength in London early in the present century. He was 5ft. 10in. in height, and about 31 years of age when he began performing, and was entirely ignorant of any method of making

his strength appear more surprising. One of his feats was that of rolling up a very strong large pewter plate with his fingers, first rubbing the latter with coal ashes. He also laid seven or eight short pieces of strong tobacco pipes across his first and third fingers and broke them all by the strength of his middle finger. He broke the bowl of a strong tobacco pipe placed between the first and third fingers by pressing the fingers together sideways. Having thrust another equally strong bowl under his girdle, his legs being bent, he broke it to pieces by the tendons of his hams without altering the bending of his legs. He lifted with his teeth and held in a horizontal position for a considerable time a table 6ft. long with a half hundredweight at the end of it, the feet of the table resting against his knees. Again, holding in his right hand an iron kitchen poker 3ft. long and 3ins. round, he struck it upon his bare

left arm, between the elbow and the wrist, till he bent the poker; and holding the ends of it in his hands, the middle being across the back of his neck, he brought both ends of it before him, and would then pull it almost straight again.

This last feat was the most difficult, because the muscles which separate the arms horizontally from each other are not so strong as those which bring them together. He broke a rope about two inches in circumference which was partly wound round a cylinder four inches in diameter, having fastened the other end of it to two straps that went over his shoulder. He lifted a rolling stone of 600 lbs. weight with his hands only, standing in a frame above it; and taking hold of a frame fastened to it. Scientific men of that period, rating the strength of the weakest man at 125 lbs., and the strength of a strong man at 400 lbs., fixed Topham's strength at double the latter

figure, viz., 800 lbs. His own weight was 200 lbs. Topham met with a serious misfortune at last through his ignorance of the tricks of the trade. He undertook to imitate the feat of the German "Samson" of pulling against horses. Seating himself on the ground with his feet against two stirrups by the great weight of his body he succeeded in pulling against a single horse, but in attempting to pull against two of them he was lifted out of his place, and one of his knees was shattered against the stirrups so as to deprive him of most of the strength of one of his legs.

One of the oldest, and at the same time, one of the most remarkable exhibitions of mechanical strength and dexterity, is that of supporting pyramids. It is described by the Roman poet Claudianus, and has been known in Europe ever since. Belzoni, the Egyptian traveller, before he began his career as an explorer in Egypt,

performed this feat in various parts of Great Britain.

That the strong men of old were equal to those of the present day, however, there is grave doubt. Nowhere in any account of them do we find any mention of their lifting heavy weights in the shape of dumb-bells (or their prototype) for practice. They seem to have placed dependence entirely on mere brute strength, and that does not go very far in performing feats of lifting, unless you have a fair knowledge of the science, coupled with great nervous force. If we were to believe all that is written of the Emperor Maximinus, he must indeed have been a wonderful athlete, and marvellously perfect in proportions. There is, however, one incredible feat mentioned by the historian, namely that of his drawing a loaded chariot which two strong horses could not move. Those who understand anything about feats of strength

will know that this would be quite impossible of accomplishment—even supposing he weighed 25 stone, which would be proportionate to his measurements—as it is weight that is requisite more than strength, to draw a load. If he weighed even double what I have reckoned, he could not have moved it. It is traditions like these that impress anyone who has a knowledge of the subject with the belief that the feats recorded in the olden times were like some of those of the present day, grossly exaggerated.

From childhood my favourite hero was Sir William Wallace, whose feats every Scottish boy hears about, particularly those with the two-handed sword which no man could use but himself. I used to think that the majority of all men of ancient times must have been of immense proportions, but that belief has been exploded by an inspection of their armour. I have

always had a great liking for visiting historical places, particularly where there was any old armour to be seen, and on several occasions I have received permission to try on the largest breastplate that could be found, but never yet did I find one that was large enough by two or three inches. When I remembered that those breastplates were worn over thick leather jerkins, I got my first inkling that the men of Bruce's day were not of large and powerful physique. Neither were they long-lived: a man was lucky if he reached forty years of age in sound health.

Scripture scenes and subjects have supplied opportunities for painters of olden times to delineate their men with enormous muscles on every part of the body; and even as near our own day as Nelson's battles were fought, many pictures where we see sailors stripped to the waist, show

large development of muscles out of all proportion to the kind of work that class of men were required to do. Indeed, those who manned our ships at that date were badly fed, and were allowed very little liberty on shore, and the mortality amongst them was frightful. Great sailors they were and great fighters beyond a doubt, but they did not possess the physique of the Man-of-War's men of the present day, who are altogether differently treated.

CHAPTER II

GREAT STRENGTH AND ITS SOURCE

As my views upon the subject of physical culture are somewhat different from those of the majority of writers, I have been induced to give them to the public in the hope that my experience gained amongst the best athletes of the day may find acceptance. I am no believer in patent "exercisers," and have no faith in their alleged potency as strength givers. Can any sensible man imagine for one moment that by pulling at a rubber, or doing any

other violent exercise, he will become a strong man, unless he comes from a perfectly sound stock and has a perfectly strong physique to start with?

I am personally acquainted with the following world-renowned athletes:—Cyclops, Milo, Saxon, John Marks, and half-a-dozen amateurs who are nearly as strong; and they all laugh to scorn the idea of using any such exercise. The first four are easily ahead of all other strong men in this country at least, or were a year ago.

I claim that a strong man is *naturally* so, and has been strong even from boyhood, and not, as one tells us, that he was a weak child up to seventeen, and only then began to exercise and develop strength.

What is the source of the great strength which well-known performers exhibit to the public? It has its origin in a perfectly

sound and healthy body, which, of course, means that the muscles are in good condition ; but the true source of the abnormal strength is the nervous force which excites the muscles to action. This explains why strong men are more frequent found among medium-sized than among tall men. The tall athlete asserts that the shorter man has the advantage over him of having shorter arms and a shorter back. The short man has certainly the advantage in weight-lifting ; such as lifting a weight from the table with the arm outstretched along the table, and using only that part of the arm from the elbow to wrist, and bringing the weight to the perpendicular stand.

On the other hand, the tall man has the advantage over the short man in snatching a weight from the ground with one sweep to arm's length or turning it to the shoulder, as he has greater room to perform the

motion than the short man. But the real reason why a short man is stronger is because his nervous force is more concentrated than a tall man's. This explains the saying that for one good big man you can always find a dozen small men as good, in any branch of athletics; but when you do find a good athlete who is head and shoulders above the smaller men, he is indeed a good one. That explains why men like Donald Dinnie, George Davidson, and a host of our leading Scottish athletes are foremost in all-round athletics, including feats of strength. They are full of concentrated nervous force, and are not dependent entirely on muscle although the muscle is there. These men do not devote themselves to building up muscle solely, as that will not produce great strength. The only way to develop this is to have an object in view and concentrate the will power—which is really the nervous force—

and the muscular energy upon it; brain and body working simultaneously.

CHAPTER III

MODES OF PERFORMING FEATS

It is astonishing how ignorant people are now-a-days concerning feats of strength which, if they took the trouble to enquire into, would seem very simple after all. To read the announcements on the play-bills you would imagine that the Strong Man had the strength of half-a-dozen ordinary men. Whereas the real truth is that the strongest man known—if it could be decided who that is—has not more than the strength of two ordinary men in good health. That is to say, a strong man may lift a bar-bell weighing 240 lbs. (which is an extraordinary weight, and is about the heaviest that

any strong man performs with) from the ground to arm's-length above the head, with both hands; and you can take two ordinary men and after a few minutes practice in getting them both to lift at the same moment, they will elevate the same weight. To lift a weight with two hands is considered the hardest way and the greatest test of a man's strength. There are strong men who can raise with one hand from the shoulder to arm's-length above the head, weights of from 200 to 230 lbs., but if you ask these same men to lift it with two hands it is ten-to-one they could not do it, proving that the one handed lift is accomplished with great practice, and is simply done with leverage of the body. This mode of lifting is not allowed in competition. It is always taken advantage of by Stage Athletes, as it is attractive, and sounds very well to say that the performer can raise such and such a

weight with one hand, the public thinking naturally that he could lift double the weight with two hands, the fact being that he probably could not lift it at all with both hands. This is why the exhibitor usually asks any competitors who may accept his invitation to come on to the stage and test his weights, to try them with both hands, as he knows that unless they were stronger than himself they could not raise them in that way.

There are so many different ways of testing strength that it is very difficult to tell a really strong man. Some athletic friend may show you a trick which looks like a feat of strength and which you may never have seen before, and although you may be a much stronger man, you may fail to accomplish it. Of such a kind is the raising of a chair by one leg. Your friend may have a larger hand or a stronger grip but that does not mean that he is a stronger man. The true test of

great natural strength is to lift an immense weight (approaching a ton) from the ground with the shoulders. This is called a harness lift. I myself have lifted twenty-two cwt. in this way, which included a small elephant and four men; as Mr. E. H. Bostock, of Bostock and Wombell fame, or his employees, can testify. This was a genuine lift without any special apparatus which some performers have for reducing the weight upon the shoulders.

Another genuine test of strength consists, as I said before, of raising a weight from the ground above the head, with two hands, or with one hand to the shoulder. Most of the other feats in weight-lifting are the result of practice and balancing, and can be accomplished by a man of normal strength. For this reason most of the up-to-date performers have almost discarded the use of dumb-bells and

Weight : 1 Ton 3 Cwts.

weights, and invented more showy and artistic feats, something that a manager can announce with *éclat* on a play-bill to attract the public, and the public will rush to see a man supporting a platform (as I do nightly) on which is placed a piano, six members of the orchestra, and a young man dancing a hornpipe, the whole supported on my knees and shoulders, with my body in the form of a bridge, hands and feet on the ground ; and they will take little notice of a man who raises a dumb-bell 240 lbs. weight—a feat of strength which, I claim, is really much greater. The public do not really understand feats of strength, and usually give more applause for the more showy though less difficult performance. One thing they do understand, however, and that is a 56 lbs. weight ; and my feat of jumping over a chair with one of these in each hand, is better appreciated than all the paraphernalia of platforms, etc.

Other feats of strength, or so called strength, such as snapping chains, breaking coins, etc., are taken very little notice of by genuine strong men, as they are considered beneath contempt. The chains are undoubtedly broken, but it is by trickery. There is one false link that breaks with very little pressure. As for breaking the coins, let the reader place a penny (which is the softest coin) in a vice and try to bend it, gripping the edge with a pair of pliers, and see how much force is really required to bend it even. He will then have an idea how great a force is required to break a penny piece. As these feats are performed so cleverly on the stage, by palming and various other ways of working the trick, I can quite believe that they can deceive the public. I have been almost deceived myself. If any one doubts my statement and should meet a strong man who professes to break coins,

let him give him a coin and ask him to break it there and then, and he will see for himself that the strong man will make some excuse He cannot do it.

CHAPTER IV

WEIGHT-LIFTERS AND THEIR METHODS

Most people imagine that when they see a man with large ponderous muscles he must be extraordinarily strong, but it is a well-known fact amongst weight-lifters that the really strongest men show no extraordinary muscular development whatever, but of course have enormous bulk, as for instance Tuerk of Vienna, who is at least twenty stone weight. Louis Cyr of Canada, who visited this country some few years back, was a very big man. Cyclops also. These men are all of enormous bulk and fitted for nothing else but weight-lifting. I do not mean say that these men have

no muscles worth speaking of, for on the contrary they have large ponderous muscles covered by a thick layer of what athletes call, for want of a better name, muscular fat. One would imagine that these men, with their enormous bulk would lift almost twice as heavy a weight as a man six or seven stone lighter, but such is not the case, as there are several athletes who, not weighing above twelve stone, show a very high development of muscle, and can lift within a pound or two of what the heavy men lift, which proves that there is a certain limit to a man's strength no matter how big or how muscular he may be.

It may naturally be asked what are the heaviest weights that have been lifted? There are strong men on the stage who profess to lift 300 lbs., but that is all "bunkum," and is as big a fraud as the chain breaking.

The only man who I believe may have been able to do that is Tuerk of Vienna. There have been no Strong Men competitions of late, so the public are really uncertain what can be done. To give a fair idea of the weights that can be lifted by them, let me cite the contest between Hercules and Sandow at the Royal Music Hall, London, in which Sandow was defeated, he having signally failed to lift from the ground to the shoulder and above the head 232 lbs. That was a dumb-bell in the right hand weighing 120 lbs., and 112 lbs. in the left, a feat which Hercules easily accomplished. This, and a lift of 174 lbs. from the ground to the shoulder and to arm's length above the head with one hand by Hercules, were, in my opinion, the only genuine feats of strength in the contest, and this is the opinion of other athletes as well. Sandow made a great outcry at the time that he

was treated unfairly, and a certain portion of the public who did not understand weight-lifting, believed him. They could not understand why he lost the decision, because he crowded up 250 lbs. in one hand from the shoulder. The judges knew differently, and he got very little sympathy amongst athletes, as the best man undoubtedly won.

Since then Sandow has become quite famous by introducing novel feats of strength, such as the horses on the see-saw, the human dumb-bell, and others. He avoided and refused all contests, although he has been challenged dozens of times by different athletes, including the writer. He tries to make the public believe that he treats all these challenges with contempt, but the real truth is he is afraid of falling off his high pedestal. I would like the reader, however, to understand thoroughly that I am in no way prejudiced

against him, for, in a sense, I admire him as an effective performer. The main idea of a Stage Performer is to keep his name before the public, and there is no doubt Sandow has been successful in this. It is quite amusing, though, to see the high-handed way in which he poses as an authority on Physical Culture. He fondly imagines his figure is perfect, which is by no means the case. He has three very grave faults—viz., the sloping shoulders, small calves, and flat feet, common to all the German athletes.

Some time ago a gentleman wrote through the pages of the "Golden Penny," expressing his opinion that if Sandow had a defect it was in his bad shoulders. Sandow indignantly replied that it was merely deception, as it was owing to the extraordinary size of the muscles leading from the neck to the shoulders that made it appear so. He may have convinced the

Shewing Triceps of arm in repose.

E. T. PENROSE, Southport, Photographer.

gentleman, but he did not convince the people who know him and who understand it. He again says he does not believe in men with square shoulders, as the man with the sloping shoulders is the strongest man. This suits his own case admirably. He further says he does not believe in the man with the massive calf—again suiting his own case delightfully. His self-admiration is truly sublime.

Sandow, when on the stage, is seen at his best, as he works with his shoulders humped up most of the time, giving the impression that he is massive across the chest. But seen at a close view in his natural state, with the muscles relaxed, he is very disappointing, and not at all the ideal figure he makes himself out to be.

CHAPTER V

MEASUREMENTS

An extraordinary and unsatisfactory kind of competition took place last year in connection with a Physical Culture Magazine in which Mr. Sandow figures as referee. There were several valuable prizes offered, the principal one being a statue supposed to be of Sandow himself, but which is as unlike his figure as that of the Farnese Hercules is to the statue of Apollo.

It is a strange competition, as the prize is to be presented to the best developed man in the British Isles, and yet the people connected with Sandow's training schools are debarred, and I suppose also

professionals. This is done of course to increase the number of subscribers to the magazine. No one would enter for this competition if well-known athletes and models were allowed to compete; so the title, whoever wins it, must be really a hollow one, and must read like this: "The Champion best developed man of the British Isles, after all other likely winners have been barred."

Had the competition been open to all (Sandow included), and had the judges been competent and unbiassed, there would have been no danger of him winning the prize. The reader may think I am hard upon Sandow, but I really wish I could say something commendable about him in the athletic line (leaving his weight lifting aside) as his athletic achievements up to now have been only on paper. Here is an instance of his craze for newspaper notoriety:—Some

time ago he challenged the world to a bicycle race of ten miles for not less than £1,000 a side, hoping, of course, that no one would take any notice of it. But, to his surprise, Stokes of Hull accepted; whereupon the challenger made the rather lame excuse that the challenge was only open for two days or so, and that he was now so full up of engagements that he had no time to go into training.

Immediately after the Oxford and Cambridge boat-race of 1898, Sandow stated that if the Cambridge crew would put themselves under his system of training, they would most certainly win. I was glad to see that "Cantab" made him look very foolish, and I think he will now understand that it is not all muscle that wins a boat-race, although, strangely enough, Cambridge won the race in 1899 independently of him.

Athletic people some time ago had a

high opinion of Sandow, but these foolish things reported in the papers, as the sporting men would say, "gave him away." Now little notice is taken of his lucubrations. Here is his very latest, which I have copied from *Tit-Bits* (and I am surprised they would print it). I asked a well-known athlete's opinion of it. He glanced at it and calmly remarked that he did not think Sandow was any relation of George Washington.

The article says that Sandow can take an oak board $3\frac{1}{2}$ inches thick, 12 inches wide, and about five feet long, fix it in a vice to hold it firmly at the top and bottom, and with a straight blow with his left fist, striking fairly in the middle of the board, break a hole right through it. He can also take a board 2 inches thick, 2 feet long, and 1 foot wide, and throwing it up in the air, hit at, and break it in two as it falls. Let the reader try this with a light

walking-stick and see where the stick goes to. I fancy this new story is really got up to give the public an idea of what would happen if he engaged in a prize-fight with Sharkey or Fitzsimmons. Both these men are considerably smaller men, Fitzsimmons, in particular, showing comparatively little muscular development in the arms—but not only can they strike a more powerful blow than Sandow, but he could not stand up two rounds in front of either of them.

There is an old saying amongst prize-fighters which has been proved true time after time : " It takes two punches to defeat a wrestler, and one to defeat a weight-lifter." So his pretensions in that quarter would be knocked on the head, especially as he is a German, and Germans as a rule do not excel in this branch of sport.

But he overdoes it sometimes ; particularly when he states his measurements to

the reporter who interviews him. I have never yet met nor heard of a man whom Sandow allowed to measure him to get at his correct measurements. The measurements he gives are pure imagination on his part, and I defy him to prove them.

Here is a list of them published in *Tit-Bits* of Feb. 11th, 1899 :—

Weight, 14 st. 6 lbs ; height, 5ft. $9\frac{1}{4}$ in. ; neck, 18 in. ; chest, 48 in. (normal) expanded 62 in. ; waist, 30 in. ; hips, 42 in. ; thigh, 25 in. ; knee, 14 in. ; calf, 18 in. ; ankle, $8\frac{1}{2}$ in. upper-arm, $19\frac{1}{2}$ in. ; forearm, 17 in. ; wrist, $7\frac{1}{2}$ in.

This does not give athletic young men much encouragement to go in for physical exercise to improve their *physique*, as they imagine it a waste of time, if they believe what Sandow says. They get dispirited when they see these enormous measurements, and wonder why they cannot come near them, especially as he professes to

have been such a weakling up to seventeen years of age. Compare the figure on the frontispiece with a photograph (same size) of Sandow, and you can easily see how much or how little difference there is. The measurements of this figure are as follows :—

Height, 5 ft. 6 in. ; weight, 12 st. 8 lb. (stripped) ; chest, 49 in. (expanded), normal, 45 in. ; biceps, 16¾ in. ; waist, 30 in. ; thigh, 24 in. ; calf, 17 in. ; neck, 17 in. These are the correct measurements.

We will now take Sandow's measurements. If he measured what he says, he would have to weigh at least 18 stone, and that without any loose flesh. In these measurements he gives a distinct difference of 14 in. between normal and expanded chest ; which I maintain is not that of a perfectly developed chest. A true athlete with a properly developed chest can never expand more than two or three inches. It

does not require an expert to see that there is something wrong about a chest that expands fourteen inches, as, if it were really the case, it only proves that the bones and cartilages of the chest are abnormally expansile. The only other man ever heard of whose chest expanded like an inflated balloon was last year on exhibition in Barnum and Bailey's show, and was classed as a freak. He is now called a prodigy. So if Sandow really persists in saying he can expand to 62 inches on the chest we have no help for it, but to place him under the heading of freaks or prodigies. The idea of developing the chest is to increase the breathing capacity of the lungs. A proper chest ought to be round and hard in the shape of a water-butt, and I must say that most of the British Army gymnasium instructors, also all our leading athletes, have this form.

My object is to correct the gross errors

found in some other books upon this subject. I have no faith whatever in the practice advocated by Sandow of taking a cold bath immediately after violent exercise, dispensing with the rough towel and dressing while the body is still wet. He says that his circulation is so vigorous that he feels no ill effects, but that he does not think everybody could stand it. I should think not. For such a practice to be seriously recommended in a book on health and physical culture, argues sheer ignorance of the laws of the body. The statement is on a par with many others of a sensational character in the book. It is startling, and answers the temporary purpose of a good advertisement. Let the reader ask his family doctor, who is at least as good an authority as the advocate of this palpably foolish practice, which stands condemned by the fact that he does not think everyone could stand it.

CHAPTER VI

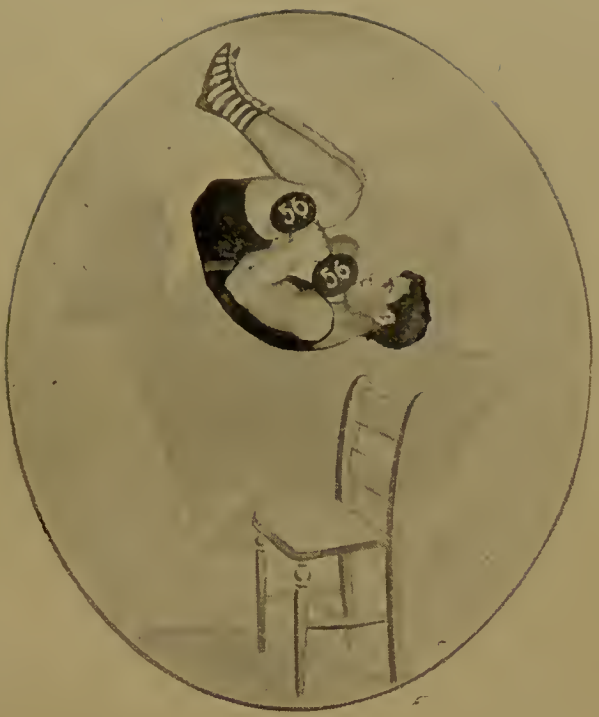
MY OWN CAREER

As to my own career, I may not be well known in England, as I found my most profitable engagements were always abroad.

I was born in the north of Scotland —Banffshire—in 1872. Contrary to some athletes who affirm that they were delicate in childhood, my case was the reverse; as not only was I wonderfully strong hereditarily, but all my brothers were similarly endowed with splendid constitutions; I, however, am the strongest. At school I easily beat my companions in all sports and games of the playground. At fourteen I could raise a 56 lbs. weight

in each hand, above my head—a feat which none of the teachers could attempt. At that time I was about 5 ft. in height and was heavily built and very active. By some means or other I got acquainted with a circus performer who was connected with a circus on a visit to the town. I had already been to see the circus, and was fired with the ambition to become a performer.

When the circus left the town, I was easily persuaded by the performer I had got acquainted with to join the company and become a member of his acrobatic troupe. I, of course, knew that I should never receive permission from my parents; so I resolved to take French leave, and the same morning that the circus left the town, I was missing at the breakfast table, and already ten miles on the way to the next town, as blythe as a lark, sitting up beside my friend who was driving one of the wagons. In the middle of every hill



Backward somersault over a low chair, carrying 56 lbs. in the hands.

Raising a man with right hand while juggling plates with left.

Jumping over a chair carrying 1 cwt.

we mounted I had to jump down and "scotch" the wheel while the horses rested. Of course it was soon found out where I had gone to. One morning, a week later, when we were busy practising in the ring, my father turned up and commanded me to return home. I, however, prevailed upon him to let me stay, and as he saw that I was in good hands he consented, thinking that a week or two would cure me of the love of circus life. Nevertheless I remained, and as my heart was in athletic work I daily increased my strength and activity. I learned one or two pretty tricks in somersault throwing, which I found very useful later on, when I became an exhibitor of feats of strength; particularly the feat in which I would throw a back somersault with a thirty-pound dumbbell in each hand. I stayed altogether nine months with this circus, and then returned home again, as the acrobatic

troupe broke up through an accident to the principal performer.

I stayed at home a short time, and then the restless fever came upon me again, and I was sent off to a farm which my uncle owned in Manitoba, Canada. I was not destined to arrive without adventure however, as the ship I went on, the *Cynthia* of the Donaldson Line, sailing from Glasgow, came in collision with the *Polynesian* of the Allan Line, in the river St. Lawrence, only seven miles from our destination, Montreal. Our vessel being the lighter one, and proceeding against the tide, received all the damages and went down in less than three minutes after the collision. The captain gave orders to make for the bank, and she went down head foremost in forty fathoms of water over sixteen people being drowned, most of them meeting their death by crowding into one of the boats which swung from

the davits, and which for some reason or other could not be lowered; until at the last moment the vessel heeled over on her side swamping the boat. I kept clear of the boat, as there really was no room, taken up as it was by the firemen and stokers who were cursing and fighting amongst themselves to get places. At the moment when the vessel heeled over I jumped from the rail near the stern and swam ashore, landing much exhausted, as the current was very strong at that place. Of course I lost all my belongings except my train pass, which I had booked through to Manitoba.

After waiting a day or two in Montreal for the inquiry I proceeded on my journey, and arrived safely at the end of it. I spent one year there. Of my farm life I have little to say, except that I relieved the monotony by practising feats of strength as often as I could. I had very little

apparatus at this time, my principal weight being a plough which I used to raise in either hand, above my head; it would weigh about 130 lbs. My other implements were two cart axels lashed together. I persevered at this until I was quite the talk amongst the farmers, who one day made a match with me to have a contest of strength with a half-breed who was famed for his strength, and had served with Louis Riel in the rebellion a short time before. Of this match I need not say more than that I defeated him easily, the heaviest weight he could raise above his head, with one hand, being 120 lbs.

A short time after I had another match with a labourer, an Irishman, who challenged me to wheel bricks up a slight incline. I had a week's practise and defeated him by wheeling 90 bricks, each one weighing 7 lbs; the most the Irishman

could manage was 65. I also at this time performed what they said was a wonderful feat of strength for one of my age, viz. :— picking up a steel rail 24 ft. long and carrying it on my shoulder a distance of 40 yards.

I received a communication one day from a circus proprietor who had heard about me, asking if I would accept an engagement, which I did ; and from that time forward I was known in the United States as the Canadian Strong Boy. I performed one season with this show, then joined a bigger one next year, afterwards doing a tour of the music halls throughout the States.

I then returned to this country and toured with a small company in Ireland, ultimately joining Bostock and Bailey's circus, and toured all through the South of England. I stayed there nine months, then gave up circuses and came under the

notice of the late Wm. Holland of the Winter Gardens, Blackpool, who became my agent and booked my engagments at most of the leading music halls in this country; after which I made a tour of Germany, France, and Holland, returning to England at intervals.

In 1897 I sailed for South America, stayed there two years, travelling through the whole of the Argentine Republic, and the Brazils, under the guidance of the popular *impresario*, Mr. Frank Brown, and meeting with splendid success everywhere.

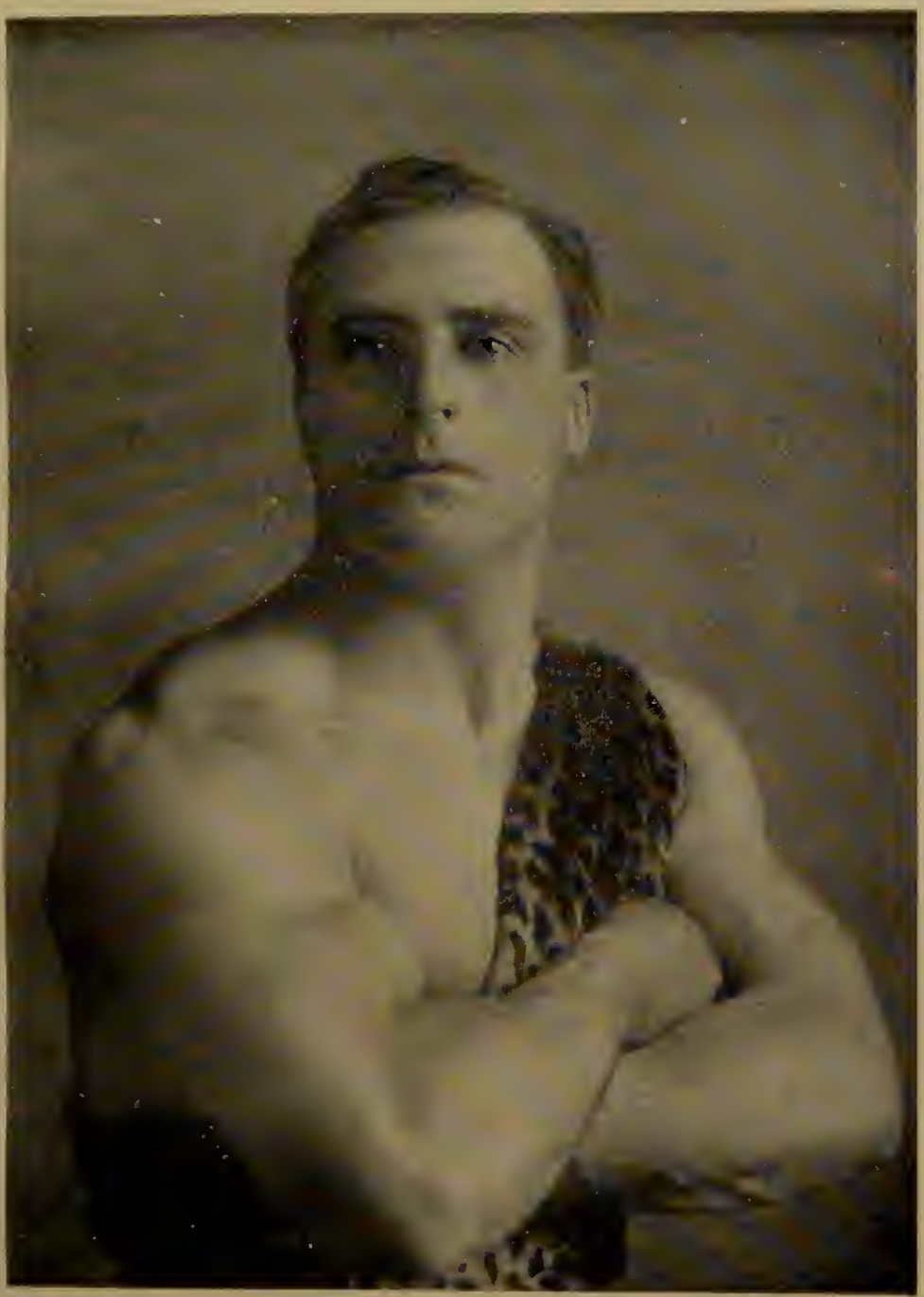
During these years I have, in addition to practising feats of strength, studiously made myself conversant with each and every subject that dealt with the human body, and particularly the muscular and nervous systems, as I considered that to really be strong and keep strong I ought to know all about my body; and well it is that I have done so, as it has saved me many a

mistake for which I might have suffered. I know exactly how far to go in testing my strength and never overdoing it; and despite what many uninformed people may think, I expect, barring accidents, to see a a good and healthy old age.

CHAPTER VII

HOW TO DEVELOP MUSCLE

THERE have been many different ways of developing muscle recommended by various athletes, which yet in the end are practically the same (especially as regards physical developing exercises), and are all more or less copies of the system originated by Professer Dowd of America. I have never believed in those so-called "exercisers," as they are too monotonous, and supply no real means of testing what strength you are gaining. If you wish your muscles to do a particular thing, you must practise that thing, starting in a small way. I have met several men with splendid



"APOLLO," AT 26 YEARS OF AGE.
Shewing Bieeps—see (rope-elimbing exereise.)

GEO. CROSS, Southport, Photographer.

development who have no real strength, despite all their practice. They certainly showed plenty of muscle, but it might just as well have been useless fat, for all the good they could do with it.

One young man who had a splendid arm and who went in greatly for *biceps* exercise was one day watching me practice climbing the rope, (which is the exercise that I recommend for the *biceps*) when I asked him how far he thought he could climb. He replied he thought he could go to the top easily although he had never tried it before: but he had unlimited faith in his *biceps*. He struggled up hand over hand, a distance of about 10 ft., but for the life of him he could get no further. His explanation of this *fiasco* was that he thought his *biceps* muscles were too big; but as my own were larger and my legs much heavier than his, he had to acknowledge there was something

else the matter. Undoubtedly he had put in much work, and showed plenty of muscle, but could produce no result, as his practise only served to increase the size without enabling him to do any particular feat. He had worked hard for three years at developing himself, sticking to very light exercises all the time. I reckoned that he had been working twice as hard as I had been, as I got as much benefit out of climbing a rope 30 ft. high, and which only occupied two minutes to reach the top and descend again, as he had got practising (as he told me he did) on the *biceps* especially, three times per day, and ten minutes each time. From all this fag he got no practical result, whereas I was able to wear out six men, good athletes, reaching the top of the rope first every time and being opposed by a fresh man each ascent, on an opposite rope, no part of the body except the

hands being allowed to touch the rope, which was fastened at the bottom, and at a slight angle.

I practised principally the same as all other strong men have done, with very light weights, gradually increasing the weight as I felt myself grow stronger, and never missing an opportunity of engaging in any athletic game that came in my way. I have no system of Dumb-bell practice other than I have been taught in the gymnasium, only that I put my mind into it. I always paid more attention to learning how to breathe properly, how to carry the figure erect with the chest expanded and the shoulders thrown well back.

There is one excellent exercise, however which I never neglect, which is called by athletes "dipping"; that is, I place two strong chairs back to back, leaving enough space between to stand with a hand on the back of each, making them for the time

equivalent to parallel bars, then raising the feet from the ground, allowing the arms to bend at the elbow I drop slowly down till the knees are nearly touching the floor, then push up to the straight arm again. This is a magnificent exercise for developing the great pectoral muscle which lies across the breast, and the deltoid muscle which lies over the point of the shoulder ; also the anterior brachial muscle just below the insertion of the deltoid. It also develops the great muscle of the back, the *latissimus dorsi*, and the *triceps* at the back of the arm. The forearm also receives great benefit, as the supinator, the common extensor, and the ulnar extensor, together with some smaller muscles of the arm, all do their fair share of the work.

This I continue till the muscles ache. I do this every morning, 50 dips, not uninterruptedly, but at intervals, during my toilet.

Shewing Deltoid, Triceps and Pectoral muscles.

E. T. PENROSE, Southport, Photographer.

CHAPTER VIII

THE CHEST, AND OTHER MUSCLES

HAVING now described how to develop the chest and the *biceps* muscles of the arms, a few words on how I keep the rest of my muscles in condition may be of interest. The dipping exercise I have previously described, which develops the deltoid, *triceps*, and upper part of the body. The neck I pay very little attention to, as one part of my performance consists of swinging a man round suspended from my teeth. This is the best exercise I know of, for developing the muscles of the neck and jaw. The novice can try this with a very light-weight to start with, gradually in-

creasing it. It is not necessary to have good teeth to perform this, as good teeth are rather a drawback, they being so smooth on the edge. Most of the performers who lift weights with their teeth, have very bad teeth, broken with jagged edges; this secures a better hold of the mouth-piece. The whole art consists in having a proper pad to fit the mouth.

Some performers have a cast of the mouth taken in wax, afterwards covered with a strong canvas or leather, but this I cannot recommend. The best way to make a pad is to get a piece of soft india-rubber, gutta percha for preference, and sew it firmly inside a folded piece of lamp wick broad enough to fill the mouth so that the teeth can get a good bite. Immediately before lifting, soak this in cold water. When anyone tries to lift with a mouthpiece of this kind he will be astonished how much weight he can raise.

Supporting with one arm 290 lbs.

Raising 400 lbs. weight by the teeth.

The best exercise I know of for developing that beautiful series of muscles lying across the abdomen is to lie flat on the back on a hard surface, the body being perfectly rigid, and the legs slowly raised to the perpendicular, afterwards reversing the movement by keeping the feet to the ground and raising the body slowly to a sitting position; this being repeated until the muscles ache. It is advisable to nail a strap on the floor for the latter half of the exercise, inserting the toes under it in order to keep the feet to the ground while the upper half of the body attains the perpendicular. This is a most severe exercise, and should be practised most sparingly by the beginner. I vary this exercise by placing a light weight on the abdomen, expanding and contracting the muscles, causing the weight to rise and fall. This is a capital method for reducing the flesh.

To develop the muscles across the loins, take two dumb-bells, 5 lbs. each to start with, and placing them on the ground side by side, stand over them with the legs wide apart; then bend over from the hips keeping the knees stiff, and raise the dumb-bells with a swing, arms stiff, above the head; repeating this movement until the muscles slightly ache. As you feel stronger, gradually increase the weight until you can do 20 lbs. or 30 lbs. in this way. Never go beyond that, no matter how strong you are; only you can increase or decrease the number of times according as to how you feel. These muscles are the foundation of a strong man, and unless they are well developed he cannot expect to become an athlete.

Most strong men suffer from weakness here at times, and if weight-lifting is still persisted in while in this state the consequence is apt to be serious, and has

ruined many a good athlete. Weakness in this direction is made known by a dull pain in the back, which feels easier when stooping forward. This partly explains how many people walk so badly. The muscles of the loins are not strong enough to support the body erect, hence the reason for corsets and broad belts which gives a feeling of relief, and help to buoy up the back. Those who suffer most from this are policemen and men with heavy bodies, who do little exercise; indeed I call this, for want of a better name, "policemen's back-ache." Almost anyone whose muscles are not well developed can incur this by sauntering aimlessly about the streets, with no apparent object in view.

But let the same man make up his mind to reach a definite point, and set off walking at a brisk pace, he will notice how quickly the pain will vanish. This is the result of his mind being occupied, the

nerves and muscles working in unison, in obedience to the will power. Proving again that all exercises for developing muscles should be founded upon the principle of having some object in view beyond the mere developing; something to be accomplished.

It is for this reason that I am an enthusiastic believer in football, jumping, and all other sports indulged in by Britons. Some athletes would have you believe that you should develop every muscle of the body first, and then go in for sports. I say, "Rot." You have only to look around amongst all our leading athletes (and there are some wonderful ones) and you will see that they show comparatively little muscle to the eye; but it is there all the same. It may seem to the reader a very extraordinary thing for me to say that I do not believe in the man with the enormous muscles as

Shewing development of fore-arm.

BUCKLEY, Photographer, Limerick.

an athlete, as his energy comes to him in a short powerful effort like the sprinter, and he cannot hold out any length of time. The man doing the marvellous feats of strength may be compared to the lion (which feeds on animal food) and is capable of enormous force for a short time, but is soon exhausted.

CHAPTER IX

THE WAIST MUSCLES

No better exercise is known for strengthening the muscle at the sides of the waist,—that is, external oblique muscles of the abdomen, and the iliac muscle, which is just above the hip-bone, —than sculling, standing up in the boat, with the feet well apart, and at every turn of the oar letting the upper part of the body sway well from the hips to each side alternately. This exercise ought to be taken advantage of whenever possible; or any other exercise making a similar movement, as it will greatly improve the carriage of the body,

Shewing Biceps of arm, thigh and calf of leg with muscles partially flexed.

E. T. PENROSE, Southport, Photographer.

To develop the muscles of the thigh, including the *sartorius* or tailor's muscle, which reaches from above the hip to below the knee, crossing the top of the thigh to the inside part of the knee; the *rectus femoris* which goes straight down the front of the thigh to the knee, and the *vastus externus* muscle, which lies on the outside of the thigh, reaching to the knee, the best exercise is jumping, not long jumps, but short quick jumps, or the exercise called dipping, performed with the legs instead of the arms, as previously described. Stand erect, with feet slightly apart, chest thrown out, rest your hand lightly on the back of a chair to keep your balance, then perform the movement of sitting down on your heels, and every time you rise stiffen the muscles of the thigh. Be careful to stand on the ball of the foot all the time, never allowing the heels to touch the

floor. The time ought to be one dip per second, continuing till the muscles ache. As you get stronger, you can strap a light weight across your shoulders.

When I perform this exercise, I generally have a small boy on my back, sitting well up on the shoulders.

Walking develops the same muscles, if done in a spirited way; but the grandest exercise of all is kicking a football, which will also greatly enlarge the *biceps* at the back of the thigh.

Shewing abnormal development of legs.
(see "Dipping" exercises.)

BUCKLEY, Photographer, Limerick.

CHAPTER X

THE LEG MUSCLES

For developing the calf of the leg there is no better exercise known than skipping, keeping on the ball of the foot the whole of the time, and skipping one leg at a time.

Climbing or mountaineering will also develop the calves. My own favourite exercise is going upstairs on tiptoe as lightly as possible and carrying a weight on my back: stiffening the muscles every time the foot falls on a step and relaxing them the moment the foot leaves it. To get the full advantage of this exercise it must be done slowly. One would

imagine that a convict undergoing punishment on the treadmill would develop enormous calves, but the reverse is the case—proving again that, unless done with a free will and zest, no good results from mere routine exercise.

For the *tibialis anticus* muscle on the front part of the leg, which when developed gives a grand appearance, use the following exercise. When sitting stretch the legs out well in front with the heels on the ground, and move the toes back and forward.

The last, and what I consider my best exercise, as every muscle of the body is at work, is to take a hand-cart with a weight in it, and pull it up a hill, digging the toes well into the ground.

These exercises are exactly what I have practised myself, and the heavier of them are intended for athletes or powerful men who have great natural strength, but whose muscles may not be large.

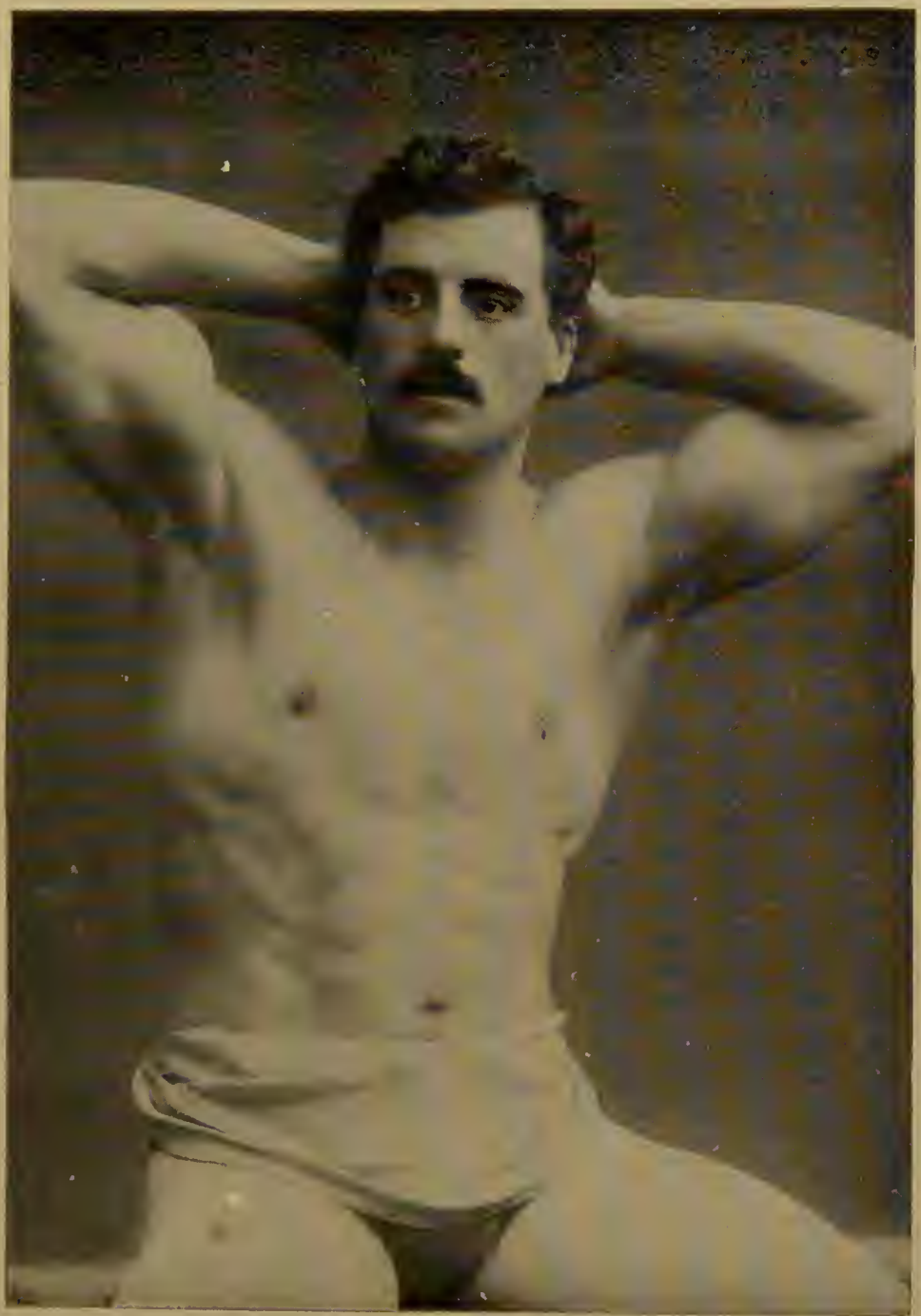
"APOLLO," 26 YEARS OF AGE.

Shewing back:—muscles not over-developed, but flesh-coat in grand condition.

The lighter exercises can be performed by any ordinary men in fair health. I do not wish the reader to think that I practise all these exercises every day; far from that; as my usual work is quite enough to keep me in condition. Weeks might elapse without my practising any of them, but whenever I have a lazy feeling or any vacant time, I make these exercises take the place of my nightly work. By doing this I manage to make the work pleasant without its becoming monotonous.

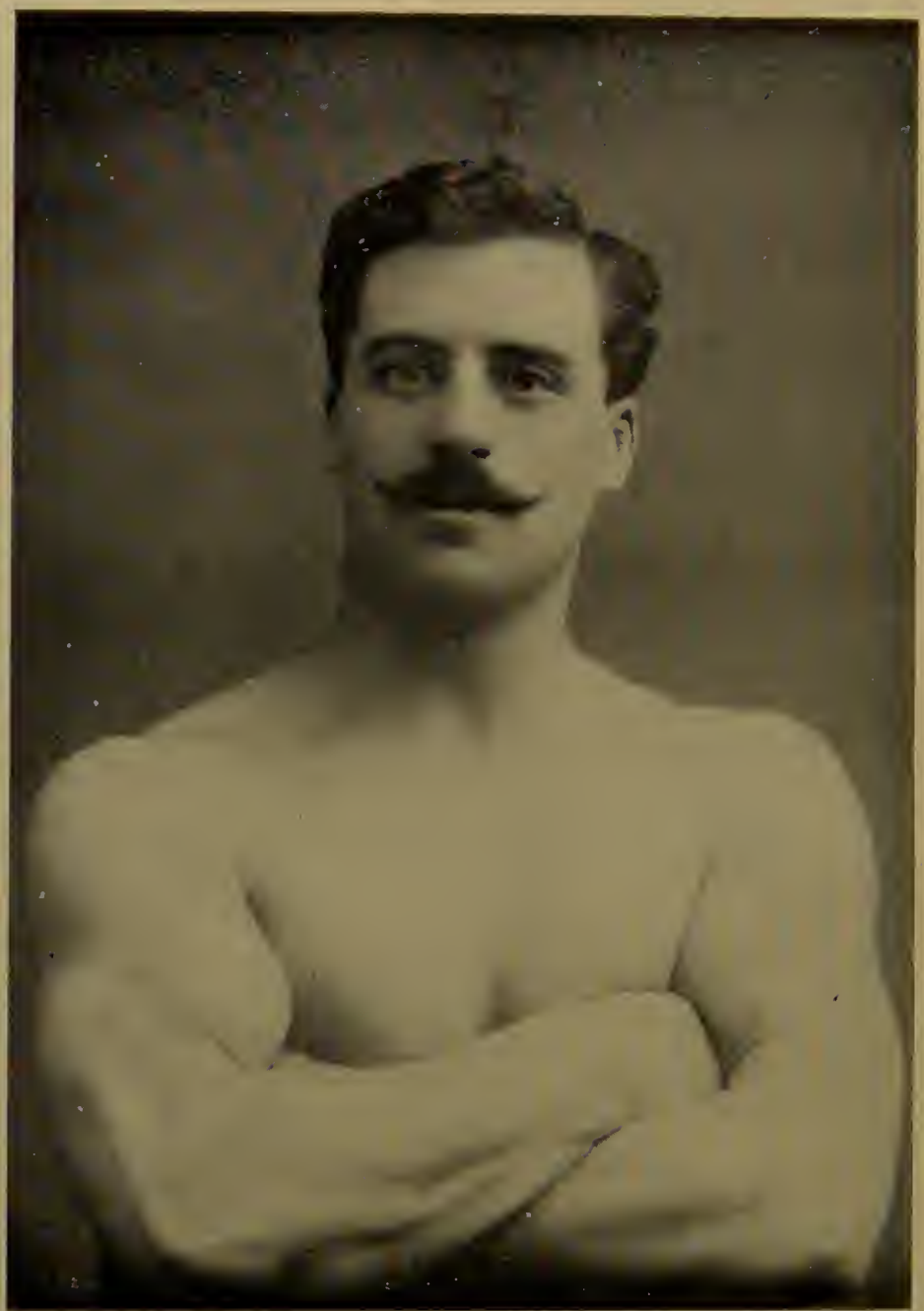
There is a limit to all development, and the main idea should be to keep under that limit; as, if you reach that point and continue still to practise the same exercises, atrophy or wasting of the tissue may be brought on. I am of the firm opinion that great danger arises from carrying athletics to extremes. It causes uneven development of limbs and

organs, due to special and extravagant devotion to one form of exercise. This is especially dangerous in immature bodies,—say under 20 years of age—causing over-strain of the nerves, and rapid waste of tissue; and most serious of all, general poisoning by the accumulation of waste products in the body far more rapidly than they can be eliminated by natural means. Indeed, over physical culture has a very bad mental effect, for the more perfectly trained a man is in a physical sense, the nearer he approaches to the level of an automaton; a splendidly balanced and regulated machine, but weakened in the higher mental qualities. It is, in short, an illustration of the old saying, "the candle cannot be burned at both ends with safety." Vital force cannot be increased in this way. It can only be specialized, and what is gained in one direction has to be lost in another.



"APOLLO," AT 22 YEARS OF AGE,
In a weak condition, the result of excessive exercise.

N. S. KAY, Bolton, Photographer.



"APOLLO," AT 22 YEARS OF AGE,
In renewed health, having curtailed the exercises.

N. S. KAY, Bolton, Photographer.

CHAPTER XI

THE PROPER METHOD OF BREATHING

ANOTHER exercise, which I practise only on bright mornings when there is plenty of fresh air about is this. I open the window from the bottom and lean out, with my hands on the window-sill, then take a deep inspiration through the nose, holding the breath a few seconds while the lungs are fully inflated. Then slightly pressing the abdomen on the sill, I let the breath slowly leave through the mouth ; repeating this movement twenty or thirty times. I also practise this while walking.

When I practised this first, I counted how many steps I could walk without

letting any of the breath go, and found that fifty were as many as I could possibly do, but with practice increased the number of steps gradually, until now I can walk one hundred and forty quite comfortably. I never practise this, of course, unless where there is good air.

Let the reader try this, especially if he has a weak chest, and he will soon find what a benefit it is. It will expand the chest as no violent exercise can, and greatly increase the lung capacity.

I found this of great use in South America, while approaching any low marshy ground, when driving or riding. The vapours from these swamps are the cause of all the fever there (together with bad drainage in the towns.)

The drivers of cars which ply to the suburbs of Santos in Brazil gave warning to the passengers, when approaching any swamps or bad drains, by taking a deep

Shewing whole figure in repose.

breath of good air, and whipping up the mules smartly to get quickly through; the passengers generally covering their mouths with their handkerchiefs, till there was pure air to breathe again.

CHAPTER XII

RULES FOR MUSCULAR EXERCISE

WHATEVER sort of muscular exercise is taken, there are certain rules which everyone should attend to. At the age of fifteen to twenty, bones, muscles, and nerves are all immature; they gradually attain during this time their firmness, bulk, and full perfection. But they require gentle treatment. Violent, and especially rapid exercise, is quite out of place in the earlier years; what should be aimed at is slow exercise, with frequent short intervals of rest. I can perhaps illustrate what I mean by an example: a youth or girl goes to a gymnasium: now

the object should not be to attain dexterity in certain exercises, (though this naturally comes after a time), but to train and develop the muscles; and yet very commonly we see them attempting, by the most violent exertions, to accomplish some difficult or rapid feat which leaves them panting, half exhausted, and with muscles over-strained. *No good instructor would allow this.* Whether a particular gymnastic feat is accomplished or not, is a matter of no consequence; the important matter is that the muscles should be at work in a way which sufficiently exercises, without over-straining them.

It may be said, indeed, in this period of life, that great rapidity and sudden violence of muscular work, should be altogether avoided. Emulation often leads to injudicious exertion.

I may conclude this chapter by repeating that every young man or woman at the

growing period of life should have the muscles cultivated, just as the mind is cultivated at a college, or in a trade; that this cultivation should be like mental tuition, systematic, continuous, and slow; be never carried beyond the powers, and be gradually made stronger and more vigorous, as the muscles and bones perfect themselves.

There is, however, another aspect of this question. In some trades there is too much bodily labour for the young frame. It is, indeed, sometimes heart-rending to see the tasks quite young people are put to. Happily, legislation has so shortened the hours of labour (for children especially), and a so much better spirit prevails among the masters and managers of our laborious trades, that overwork is less common than formerly. When young persons are over-worked, it is soon detected by a want of, or an unequal development; the muscles are

not firm and elastic, but soft; they are, in fact, overworked and underfed, and without sufficient rest. A boy at very strong manual labour who is well fed, and yet does not develop, is overworked. Of course the sense of uneasiness and aching at the end of the day's work also shows that the exertion is out of proportion to the age and strength.

CHAPTER XIII

WHAT TO EAT

"In general, mankind, since the improvement of cookery, eat about twice as much as nature requires."

"Simple diet is best, for many dishes bring many diseases, and rich sauces are worse than even heaping several meats upon each other."

. . . . . .

Food is the material of which we are composed, and on which we depend for our existence; it is that which contains in larger or smaller proportions the same elements as our bodies, and replaces or repairs the loss constantly sustained by the wear and tear of daily life, consequently that which does not form

flesh, or help to maintain some vital process, cannot be called food. Man may subsist on almost any kind of food, animal or vegetable, provided it contains all the elements of nutrition; in other words, it must be flesh-forming and heat-giving. The animal kingdom depends for support on the vegetable kingdom, and that is the reason why both animal and vegetable food contain the same life-sustaining properties; hence it is that man can live on vegetable food alone, or wholly on animal food. The vegetable eater gets his nourishment in all its purity from the original source, and converts it for the first time into his own flesh and blood; whereas the flesh eater gets his from a second-hand source, and re-converts into his own flesh that which has already been used by another animal.

It is calculated that from two-thirds to three-fourths of the human race live on simple vegetable diets. The peasantry of

Norway, Sweden, Russia, Denmark Germany, Turkey, Greece, Switzerland, Spain, Portugal, Scotland, Ireland, Wales, and almost every other country in Europe, live chiefly on vegetable food. Millions live almost entirely on rice. The Persians, Hindoos, Burmese, Chinese, Japanese, the inhabitants of the East Indian Archipelago, of the mountains of Himalayah, and, in fact, most of the Asiatics live upon vegetable productions. The great body of the ancient Egyptians and Persians, confined themselves to a vegetable diet, and the Egyptians of the present day, as well as the negroes, (whose great bodily powers are well-known,) live chiefly on vegetable substances.

The brave Spartans, who, for muscular power, physical energy, and ability to endure hardships, perhaps stand unequalled in the history of nations, were vegetarians. The departure from their simple diet was

soon followed by their decline. The armies of Greece and Rome, in the times of their unparalleled conquests, subsisted on vegetable productions. In the training for the public games in Greece, where muscular strength was to be exhibited in all its varied forms, vegetable food was adhered to; but when flesh meat was adopted afterwards, those hitherto athletic men became sluggish and stupid.

The hardy, sturdy peasantry of Scotland live mainly on oatmeal porridge and milk, barley, and potatoes, and they are robust, active, and long-lived. Dr. Johnson defined the word's 'oats' as 'food for men in Scotland, and horses in England;' to which the spirited Lord Elibank replied—"Yes, indeed; and where will you find such men and such horses?"

It is said that vegetable-eating animals are stronger, and capable of greater endurance than flesh-eating ones. For

pure muscular strength, the rhinoceros exceeds all animals now known on earth, and it lives on the lowest order of vegetable food. This animal is not more than half the size of an elephant, and yet a whole drove of elephants will fly with terror from it, and every other beast is equally afraid of it. It is true that man may accustom himself, or animals under his care, to live on a very unnatural diet for a limited period, but never equal to that enjoyed by animals which subsist on purely natural food.

It is said that cows on the sea-shore may learn to live on fish; that a sheep has been taught to eat beef-steak; and that a horse may be taught to drink whisky and chew tobacco; but none of these things are natural to any of them.

Experience teaches us that the food best adapted to the human constitution, and that which at the same time is most con-

ducive to health and long life, is derived principally from the vegetable kingdom. Bread has been truly termed the "staff of life;" for in itself it contains all the elements of nutrition, all that is necessary to repair the waste of the system. Amongst foods it justly ranks the highest. Brown bread made of whole wheat is sweeter and more wholesome than white bread.

Milk, in the shape of good cheese—such as Cheddar, Stilton, Gloucester, and Cheshire—is perhaps the greatest flesh-forming and bone-forming food known; it has nearly twice the amount of nutriment contained in the same weight of cooked meat. Eggs are wholesome and nutritious. Oat-meal, barley-meal, indian-meal, beans, dry peas, green peas, sago, tapioca, potatoes, turnips, carrots, parsnips and so forth, prepared in various ways, all contain flesh-forming and heat-giving qualities. Oat-meal, wheat-meal, and

barley-meal contain all the essentials of nutrition in very large proportions; but all are nutritious and easy of digestion, and all are very cheap and pure compared with butcher's meat. Fish is very nutritious and largely flesh-forming. The flesh of a red-blooded fish, such as salmon, is more nourishing than that of a white-blooded fish, as cod, etc. Fish is perhaps a purer kind of food than butcher's meat, and is digested in about half the time. Butcher's meat is the most expensive form of food, and is certainly not the purest or most nourishing, being of much less value as a flesh-former and a heat-giver than ordinary cheese; it is nevertheless nutritious. It is more stimulating, and increases the vital action of the whole body, causes a more rapid pulse and a hotter skin than a vegetable diet. Beef is more nourishing than mutton, veal, pork, or lamb, and less is lost in cooking it than mutton or lamb.

It is therefore the most economical form of animal food.

Salt meat is not so nutritive as fresh, boiled or roasted. Salt lessens the relish and causes a craving for fluids; it should therefore be avoided as much as possible. Pork and veal should be avoided altogether, especially pork, as it is oftener diseased than other forms of animal food; besides, they take from five hours, and upwards, to digest. Some kinds of food are more easily digested than others; and the time required for the assimilation of the same articles of diet varies according to the condition and mode of cooking. The following table is an approximation to the time required for digestion of some of the different articles of ordinary consumption. It was prepared by Dr. Andrew Combe, and exhibits the general results of all the experiments conducted by Dr. Beaumont on the stomach of a young Canadian

named Alexis St. Martin who was accidentally wounded by the discharge of a musket. The circumference of the wound extended to about twelve inches, and the opening in the stomach nearly in its centre, was about two inches below the left nipple. When the stomach was nearly empty, Dr. Beaumont was able to examine its cavity to the depth of five or six inches. During the time the experiments were made, Alexis was in perfect health, so that the results of his experiments may be considered generally applicable to persons enjoying good health.

Table showing the approximate time of digestion of the different articles of diet :—

Articles of Diet.	Mode of Preparation.	Time required for Digestion. Hrs.	Mns.
Rice,	Boiled,	1	0
Tripe, soused,	Do.,	1	0
Pigs' feet, soused,	Do.,	1	0
Eggs, whipped,	Raw,	1	30
Trout, salmon, fresh,	Boiled or fried,	1	30
Soup, barley,	Boiled,	1	30
Apples, sweet and mellow,	Raw,	1	30
Venison, steak,	Boiled,	1	35
Brains,	Do.,	1	45
Tapioca,	Do.,	2	0
Barley,	Do.,	2	0
Milk,	Do.,	2	0
Liver, beef's fresh,	Broiled,	2	0
Eggs, fresh,	Raw,	2	0
Codfish, cured,	Boiled,	2	0
Apples, sour and mellow,	Raw,	2	0
Cabbage, with vinegar,	Do.,	2	0
Milk,	Do.,	2	15
Eggs, fresh,	Roasted,	2	15
Turkey, wild,	Do.,	2	18
Do., domestic,	Boiled,	2	25
Do., do.,	Roasted,	2	30
Goose,	Do.,	2	30
Pig, suckling,	Do.,	2	30
Lamb, fresh,	Broiled,	2	30
Hash, meat and vegetables,	Warmed,	2	30
Beans, pod,	Boiled,	2	30
Cake, sponge,	Baked,	2	30
Parsnips,	Boiled,	2	30
Potatoes,	Baked or roasted	2	30
Cabbage,	Raw,	2	30
Spinal Marrow,	Boiled,	2	40
Chicken, full-grown,	Fricassee,	2	45
Custard,	Baked,	2	45
Beef, with salt only,	Boiled,	2	45
Apples, sour and hard,	Raw,	2	50
Oysters, fresh,	Do.	2	55
Eggs, fresh,	Soft boiled,	3	0
Bass, striped, fresh,	Broiled,	3	0
Beef, fresh lean,	Roasted,	3	0
Beef, steak,	Broiled,	3	0
Pork, recently salted,	Raw or stewed,	3	0
Mutton, fresh,	Broiled or boiled,	3	0
Soup, beans,	Boiled,	3	0

Articles of Diet.	Mode of Preparation.	Time required for Digestion. Hrs.	Mns.
Chicken, soup,	Do.,	3	0
Cake, corn,	Baked,	3	0
Dumpling, apple,	Boiled,	3	0
Oysters, fresh,	Roasted,	3	15
Pork, steak,	Broiled,	3	15
Pork, recently salted,	Do.,	3	15
Mutton, fresh,	Roasted,	3	15
Bread, corn,	Baked,	3	15
Carrot, orange,	Boiled,	3	15
Sausage, fresh,	Broiled,	3	20
Flounder, fresh,	Fried,	3	30
Catfish, fresh,	Do.,	3	30
Oysters, fresh,	Stewed,	3	30
Beef, fresh, dry,	Boiled,	3	30
Beef, with mustard, etc.,	Roasted,	3	30
Butter,	Melted,	3	30
Cheese, old, strong,	Raw,	3	30
Soup, mutton,	Boiled,	3	30
Oyster soup,	Do.,	3	30
Bread, wheaten, fresh,	Baked,	3	30
Turnips, flat,	Boiled,	3	30
Potatoes, Irish,	Do.,	3	30
Eggs, fresh,	Hard boiled or fried,	3	30
Green corn and beans,	Boiled,	3	45
Beet,	Do.,	3	45
Salmon, salted,	Do.,	4	0
Beef, fresh, lean,	Fried,	4	0
Veal, fresh,	Broiled,	4	0
Fowls, domestic,	Broiled or roasted,	4	0
Ducks, domestic,	Roasted,	4	0
Soup, beef, vegetables & bread,	Boiled,	4	0
Heart, animal,	Fried,	4	0
Beef, old, hard, salted,	Boiled,	4	15
Pork, recently salted,	Fried,	4	15
Soup, marrow bones,	Boiled,	4	15
Cartilage,	Do.,	4	15
Pork, recently salted,	Do.,	4	30
Veal, fresh, fried,	Fried,	4	30
Ducks, wild,	Roasted,	4	30
Suet, mutton,	Boiled,	4	30
Cabbage, with vinegar,	Do.,	4	30
Suet, beef, fresh,	Do.,	5	3
Pork, fat and lean,	Roasted,	5	15
Tendon,	Boiled,	5	30

The following table shows the relative value as flesh-formers and heat-givers of some of the principal articles of daily food :—

Constituents of Food.	Solid Matter.	Water.	Flesh-forming Principle.	Heat-giving Principle.	Mineral Matters.
Weight.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.
100 lbs Cheese,.....	61	39	31	25	5
100 ,, Dry Peas,.....	86	14	23	60	3
100 ,, Cooked Meat,.....	37	63	22	14	1
100 ,, Oatmeal,.....	89	11	17	69	3
100 ,, Barley Meal,.....	84	16	14	68	2
100 ,, Fish,.....	22	78	14	7	1
100 ,, Wheat Flour,.....	80	20	13	66	1
100 ,, Indian Meal,.....	87	13	11	75	1
100 ,, Cocoa Nibs,.....	99	1	10	86	3
100 ,, Bacon,.....	72	28	8	63	1
100 ,, Bread,.....	58	42	7	49	2
100 ,, Rice,.....	100	0	7	92	1
100 ,, Green Peas,.....	46	54	7	36	3
100 ,, Milk,.....	14	86	5	8	1
100 ,, Sago, Arrowroot, & Tapioca,	87	13	4	82	1
100 ,, Potatoes,.....	26	74	2	23	1
100 ,, Parsnips,.....	21	79	2	18	1
100 ,, Carrots,.....	14	86	1	12	1

Butter, suet, sugar, fat, etc., do not form flesh as most people suppose, but simply produce heat in the body. I am a strong advocate for a liberal use of sugar, where

any heavy muscular work has to be accomplished.

Respecting the quantity of food which should be taken daily, no rule can be laid down : it depends on age, constitution, and the waste incurred by exercise or otherwise ; but three hearty meals are quite sufficient for adults enjoying ordinary health ; more than three are not conducive to health. Our food should be thoroughly masticated, as it undergoes an important change in the mouth by the saliva ; and unless it is so, we do not derive the same amount of nourishment from it. Even when the food is so soft as not to require chewing in order to be swallowed, it ought to be well mixed with saliva.

Few appear to be aware of the action of food on the human body ; how it influences our daily life, our thoughts, our aspirations, and our actions ; how it either tends to make us agreeable,

civilised beings, or irritable, cantankerous, miserable wretches ; how it either shortens or prolongs life. Kean, the actor, is said to have suited the kind of meat which he ate to the part which he was going to play—selecting mutton for lovers, beef for murderers, and pork for tyrants.

Those who live largely on flesh are usually spirited, excitable, easily irritated, and often passionate—qualities which tend to wear out the system ; on the other hand those who use flesh sparingly, or live almost entirely on vegetable food, are, as a rule, contented, cheerful, quiet and thoughtful—qualities which are very favourable to longevity.

On the whole, a plain, simple pure diet is very much more conducive to health and long life than a luxurious and costly one.

In conclusion, if you wish to live for a hundred years, take plenty of exercise, abstain from all pernicious habits, such as

drinking intoxicating liquors, smoking, and chewing tobacco; live on a plain, pure, wholesome diet. In short, eat and drink to live, and no longer live to eat and drink. Have an aim to live; live to do good; live to make others healthy and happy. Remember that "He most lives, who thinks most, feels the noblest, and acts the best."

Dr. Blackie, on the subject of food, says: "Next to quality, a certain variety of food is by all means to be sought after. The stimulus of novelty, that goes along with variety, sharpens appetite; besides that, nature, in all her rich and beautiful ways, emphatically protests against monotony. It is moreover, a point of practical wisdom to prevent the stomach from becoming the habituated slave of any kind of food. In change of circumstances the favourite diet cannot always be had; and so, to keep himself in a state of alimentary

comfort, your methodical eater must restrict his habits of locomotion and narrow the range of his existence to a fixed sphere where he can be fed regularly with his meted portion."

CHAPTER XIV

DRINKING AND BATHING

WATER is the fittest drink for all persons of all ages and temperaments, and of all the productions of nature and art, it comes nearest to that universal remedy so much searched after by mankind, but never discovered. Water is the best and only natural drink of man and the lower animals. No other drink quenches thirst so thoroughly, or aids digestion so rapidly. The upper classes in this and other countries usually take wine after dinner, and those who cannot afford that take ale porter, tea, coffee, etc.—having a notion that anything is better than water. This

is a great mistake; for the purity of the water is interfered with by having these things in solution, and is rendered less useful, and in the case of alcoholic drinks even hurtful: so that instead of assisting assimilation they actually hinder it, and whatever interrupts the healthy action of the digestive organs is injurious.

In Professor's Blackie's book on "Physical Culture," we find the following:—

"Honest water certainly has this merit, that it 'never made any man a sinner;' and of whisky it may be said that when indulged in habitually, it never made any man either fair or fat. He who abstains from it altogether will never die in a ditch, and will always find a penny in his pocket to help himself and his friends in an emergency."

The water we drink should always be filtered. Rain water, which is conveyed through exposed pipes placed along houses,

often brings along with it poisonous matter which has accumulated in the pipe, and river water contains putrid substances, animal and vegetable; so that filtering is absolutely necessary.

Every moment of our lives we are throwing off matter—one way being through the pores of our body. This matter should be washed off at least once a day, in order that the pores may be kept open and the body clean—sponging the whole body morning and evening with cold water would not be too often. A cold water bath immediately after getting out of bed is a capital tonic; it invigorates the whole system, hardens the skin and renders us less susceptible to colds. It must, however, be taken in a common-sense way, and modified to the constitution and state of health of the bather.

One recent professor of physical culture advises splashing the cold water twenty-

five times over the head, then fifteen times against the chest and ten times against the heart. He says, personally he finds the very best form of the cold bath is to get into your clothes after it, without drying your body at all, as the damp is carried away through the clothes and no particle of wet is left. But when we consider that the true skin is covered by a sort of horny layer, called the scarf-skin or cuticle, and that this latter is always being detached by fricton with our clothes, else it would soon lessen the transpiration of the skin, this mode of removal is not quite enough. It should be washed and *rubbed* off regularly. Mere splashing will not serve the purpose ; so that the primary object of the bath would be nullified unless it be followed by plenty of vigorous friction, which is necessary also to prevent chill. The most superficial thinker will understand at once that the bath is a mere form, if the most

beneficial part of it be omitted, viz, friction. Frequent ablution over the whole body is a necessity for health. If it can be done, all healthy young people should wash in cold water all over the body every day, and should use strong friction afterwards. If circumstances do not permit this to be done, still everyone can, in the present day, get frequent baths, which are very cheap, and thus secure this important point.

A periodical warm bath, with soap, is advisable to dissolve and remove the greasy exudation from the skin, while an occasional Turkish bath is a most efficient skin cleanser, and a first-rate tonic for the whole system.

CHAPTER XV

ALCHOLIC LIQUORS

"Wine is a mocker, strong drink is raging; and whosever is deceived thereby is not wise."

"O thou invisible spirit of wine, if thou hast no name to be known by, let us call thee—'Devil'!"

Among the many causes which contribute to shorten life, there is none greater in this country than the use—moderate or otherwise—of alcoholic drinks, such as ale, porter, brandy, whisky, rum, wine, etc.

I do not speak specially of drunkeness, which is the sole cause of 60,000 deaths annually in the United Kingdom, but of what is usually considered moderation.

Many regard intoxicating liquors as necessaries of life. So far from this being

the case, the very opposite is true, there being scarcely anything more destructive of life. The most distinguished medical men have acknowledged that alcohol is not a food. It does not nourish. It does not make blood, from which alone nerve, muscle, flesh and bone, can be formed. It goes out of the body the same as it went in, the body having to suffer for its having been there, and being left much weaker.

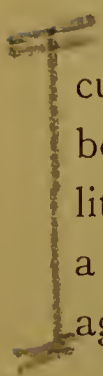
It has two actions on the body : it excites and it stupefies. The stupefying action is four or five, and in many cases six or seven times as long in duration as the exciting one ; and it is, therefore, the greater and more powerful action of the two. The narcotic or stupefying action of all intoxicating drinks takes away the "governing nerve" power of the heart, and causes the organ to throb with greater violence so long as its strength will enable it to do so.

Nay, more; the apparent stimulation is really due to paralysis of this "governing nerve"—the removing of the brake, as it were—so that the heart runs away, and thus becomes the sooner exhausted. Alcohol is therefore not a stimulant, but a sedative or narcotic; and this is its action from first to last.

If you wish to keep in good health to old age, never touch intoxicants as beverages, but spend the money in better food or better clothes. It is astonishing how much may be done with the money usually spent on beer. There are many agreeable drinks which you can substitute. If a little rice is washed in cold water, and then boiled in a good deal of water, the fluid, if a little sugar is added, is a pleasant and nutritious drink. It is much used in India by our men. In winter it may be taken warm, in summer cold; and in summer if you buy an ounce of powdered tartaric

or citric acid, which is cheap enough, and put a small quantity in this rice-water, a very refreshing acid beverage is obtained. You will soon learn when you have got acid enough ; and it should not be too acid ; only just enough to be pleasant. The boiled rice, of course, must be used as food.

If you live in the country and can get skimmed milk, nothing can be better both for you and your family than to drink this at dinner and supper. It is well always to boil it, and a little sugar makes it still more agreeable ; no acid must be used to this.



If you have a garden and can get either currants or raspberries, the pressed juice, boiled in water and then mixed with a little tartaric acid and bottled, will keep a long time, and is a very wholesome and agreeable beverage.

A little oatmeal boiled in water, and then sweetened, also makes a good drink. So that you have a choice of beverages

if you find the want of something besides water. But if you can get to like plain water you are a lucky man. You may have heard the story of the commercial traveller who boasted that he could name every kind of drink that might be given him with his eyes shut. In all the tests he was successful until someone gave him a wineglassful of water, when finally he had to confess he was baffled.

When you have any heavy work to do. by far the best drink is thin oatmeal and water with a little sugar added. The proportions are ¼lb. of oatmeal to two or three quarts of water, according to the heat of the day, and your work and thirst. It should be well boiled, and then an ounce or more of brown sugar added. If you find it thicker than you like just add more water. Before drinking it shake up the oatmeal well through the liquid. In summer drink it cold; in winter hot. You will find it

not only quenches thirst, but will give you more strength and endurance than any other drink. If you cannot get it boiled, you can take the oatmeal mixed with cold water and sweetened, but this is not so good; always boil it if you can. Wheat flour will do, but not quite so well. It is quite a mistake to suppose spirits give strength; they give a spurt to a man temporarily, but that goes off, and if more than a certain quantity be taken they always lessen the power of work.

For quenching thirst, few things are better than weak coffee and a little sugar. One ounce of coffee and half an ounce of sugar boiled in two quarts of water and cooled, is a very thirst quenching drink. Cold tea has a similar effect, but neither is so supporting as oatmeal.

Thin cocoa is also very refreshing, and supporting likewise, but is more expensive than oatmeal.

CHAPTER XVI

TOBACCO

Few will venture to affirm that the use of tobacco, whether smoked or chewed, is essential to life, or has any nutritious qualities, or does in the slightest degree promote life and longevity. It is used, with few exceptions, as a luxury only, and as in the case of alcohol and other luxuries of a similar nature, the user oftentimes has to pay the penalty in the shape of numerous diseases, and in many instances an early grave. The life destroying principal in tobacco is nicotine, a poisonous alkaloid so deadly in its nature that the amount of it contained in one cigar when extracted and received

into the stomach in a pure state is sufficient to kill two men. The testimony of many of the most eminent writers on medicine clearly shows that the use of tobacco is exceedingly injurious to the body ; and has been proved in numerous instances to have occasioned diseases, such as ulceration of the lips, gums, cheeks, mucous membrane of the mouth and throat ; with other affections of a more serious character.

According to a record kept at Yale College, U.S.A., it is found that smokers are 20 per cent. shorter, 25 per cent. lighter, and have 60 per cent. less lung capacity than abstainers.

At Amherst, statistics shew 24 per cent. weight, and 37 per cent. height in favour of abstainers from smoking. So that not only are diseases incurred, but the physique is stunted, if the habit is formed in early life.

CHAPTER XVII

INDOLENCE

Inactivity of body and mind is exceedingly prejudicial to health and longevity; it is the fruitful parent of more diseases than thoughtless people are disposed to believe. Idle people cannot be said to enjoy a single day's health; their mode of living is in direct opposition to all the laws of life; a continual struggle against nature. What oil is to the machine, exertion is to the body; and without it the system is completely deranged; the circulation of the blood is interrupted, and consequently all the organs are enfeebled, and life may be said to be at a very low ebb. Idleness and

filthiness are twin-sisters who are seldom if ever found apart; indeed the one is the counterpart of the other. The body and mind are so intimately connected, that whatever effects the one influences the other: and one may judge to a large extent of the disposition of a person, by the cleanliness or otherwise of his body. Filthiness of person disposes to impurity of mind and immorality. The slothful are usually dirty; the exhalations from the skin remain unremoved, obstructing perspiration, and engendering disease in themselves, as well as rendering the atmosphere obnoxious to all around them. The idler is necessarily a miserable creature, dull, hypochondriacal, and melancholy—qualities which are very unfavourable to long life.

The antidote to this wretched curse of indolence is a constant and brave fight against it by taking cheerful muscular exercise and recreation among others not

so afflicted; and it is my own conviction that even a drunkard,—who is the very worst of idlers,—if he can only be induced to take an interest in the culture of his own body, and take a wholesome pride in it, will, in the end, not only overcome the habit, but actually loathe the thing that made him so slovenly and objectionable to all around him. From my own experience I can honestly aver that amongst all my own athletic friends, and hosts of amateurs whom I have advised professionally during my travels, I have never found one who had the slighest liking to alcoholic drinks after they had their eyes opened to the desirability of developing their own physical powers. A man who takes an interest in his body will naturally make the care of his outside appearance the next step, and will always be clean and neat as far as circumstances will permit. I need scarcely say that this does not mean "foppishness," as

that belongs to the class of people who care only for outward appearance, and depend upon their tailor for their figure.

CHAPTER XVIII.

SENSUALITY

On this subject I will here make a quotation from the excellent treatise of R. Scott Chrystal,* the facts of which are well known and understood by athletes, and constitute an admirable guide for all who care for the ideal body. "The excessive gratification of the passions is extremely detrimental to long life; and especially is this the case with amativeness, as there is no other passion so exhausting and baneful in its effects.

"In youth, the period of growth, when the organs are in the process of formation, and when every kind of strength and nourishment is required, sexual intercourse, and especially excess, is exceedingly injurious;

**Health and Long Life.* R. Scott Chrystal.

it impedes nutrition, weakens and softens the organs, dries and withers the skin, impairs the sight, and dulls the memory; it saps the very foundation of life, and hastens consumption and death.

"Without referring to the grosser forms of sensuality, without entering upon the long catalogue of dreadful diseases incident on prostitution, suffice it to say that, even at a proper age, excess materially shortens life. It leads men to self-destruction in other directions in order to gratify the passion. Strong drinks, brandy, rum, whisky—tobacco, and every form of stimulant is resorted to in order to provoke the morbid craving, and thus the work of destruction proceeds until disease and death make a speedy end of it."

. . . . . .

In an excellent and eloquent address by the Very Rev. W. Lefroy, D.D. (Dean of Norwich) to a congregation of young

men, at the Polytechnic Institution, London, he said:—"The body! It is the most glorious organ of divine mechanism outside heaven. There is not on the face of God's earth such a piece of machinery as your body. Preachers never made a greater mistake than when they disparaged that body. The Greeks did not;—and they were imitating them in the Polytechnic. I am here to tell the young men before me to avail themselves of all the means and advantages which this Institution affords them in connection with the development of the human body.

"There is no animal in the world that can bear so much fatigue under such a variety of conditions as man. To speak disparagingly of such a masterpiece of capacity is to do dishonour to our Creator."

CHAPTER XIX

ATHLETES BEWARE

ATHLETICISM means competition of a physical kind; the dangers of it lie in the trials so often made of one body testing its power against another. If all were of the same cast the trial might be fair and to a considerable extent free from risk, because the overstrain of the weaker might be small, and skill might win. The risk comes in from the efforts made by organs of different qualities;—qualities not understood by their owners, and liable to the most serious misunderstanding by them. Even the skilfullest and most commanding athletes are not safe. The young athlete does not make an old one. The watch

is over-wound. If we put an india-rubber band round letters or parcels it holds well at first, and it holds long if it be kept on with no more than moderate firmness. In like manner the elastic and rebounding tissues of our organs, and especially of our minute channels of circulation, keep strong, and will do so if they are not too long and too often subjected to tension or pressure. If they are like the rubber, they give way and rupture, and lose their straining power. Then we see the athletic engine, the body, destroyed for athletic work often before its prime. It should last with fair play, say, twenty years ; but otherwise it begins to fail in fifteen, and is practically dead in twenty. The man is considered to be too old, and must make way for the younger aspirant. If good physical exercise could therefore be kept free of competition it would be far better for the world at large.

CHAPTER XX

ON ELECTRICITY FOR THE MUSCLES

I have great faith in electricity for keeping the muscles in condition, especially after any hard work, when I find it acts as a soothing tonic. I have invented what I call a "muscle developer," which is useful to anyone who really wishes to go in for the sole object of building up muscle. I use it on my friends for rheumatic attacks and stiffness after unusual exertion. It is a combination of electricity and light dumb-bell exercise at the same time. Everyone who has tried it is enthusiastic about its efficiency in driving rheumatism away—and as a mere

muscle developer it stands a long way ahead of any other so-called developing-machine. The beauty of it is that it can be used by even aged people.

I have fully protected and patented this, and the machine will shortly be procurable at a low price.

NOTE

In reply to many enquiries from all over the world, respecting my electrical developer, I here inform future applicants that I have decided not to put it on the market. I have not departed from my conviction that no developer is of universal utility, especially the so-called developers sold by strong men, and which undertake to produce fabulous results on all and sundry. Hence my desire to dis-associate myself from various professors whose sole object in rushing into print, seems to be to recommend the general public to purchase some mechanical appliance of antique design, and in which they have a financial interest. Personally, I adopt a different method with every pupil, as my aim is health and activity before any other consideration. W.B.

CHAPTER XXI

THE DUTY OF PRESERVING OUR HEALTH

For keeping the body in a fine poise of flexibility and firmness, nothing deserves a higher place than games and gymnastics.

Health is the working-man's capital, and he ought to watch over it more than the capitalist over his largest investment. Health lightens the efforts of body and mind; it enables a man to crowd much work into narrow space. For these reasons I cannot but look on it as a good omen that the press is circulating amongst us cheap works in which much useful knowledge is given of the structure, functions,

and laws of the human body. It is in no small degree through our own imprudence that disease and debility are incurred; and our remedy is to be found in knowledge. Once let the mass of the people be instructed in the knowledge of their own frames; let them understand clearly that disease in not accident, but has fixed causes, many of which they can avert, and a great amount of suffering, want, and consequent intellectual depression, will be removed.

I hope I shall not digress too far when I add that were the mass of the community more enlightened on these points they would apply their knowledge not only to their private habits, but to the government of the city, and would insist on municipal regulations favouring general health.

. . . . . .

What is Health? Health is that which makes your meat and drink both savoury and pleasant; else nature's injunction of

eating and drinking were a hard task and a slavish custom.

Health is that which make your bed easy and your sleep refreshing; that which revives your strength with the rising sun, and makes you cheerful at the light of another day; 'tis that which fills up the hollow and uneven places of your carcase, and makes your body plump and comely; 'tis that which dresseth you up in nature's choicest colours. 'Tis that which makes exercise a sport and walking abroad the enjoyment of your liberty. 'Tis that which maketh fertile and increaseth the natural endowments of your mind and preserveth them long from decay, maketh your wit acute and your memory retentive.

CHAPTER XXII

TO BECOME BEAUTIFUL—A CHAPTER OF INTEREST TO LADIES

ARE you beautiful? Have you a perfect form? Most persons think that the beautiful woman is the rare and peculiar individual. Dr. Stratz, a German physician, holds that the normal woman is beautiful. If you are normal you are beautiful, if you are abnormal you cannot be beautiful. These are the proportions of the perfect woman as he has found them after countless measurements :—

The height should be seven and a half times the length of the head, ten times the length of the face, nine times the length of

the hand, six to seven times the length of the foot. The distance from temple to temple should be equal to the length of the face. The arm should be three times the length of the head, the shoulders two heads wide. By these proportion every woman may see whether all parts of her body bear the proper relation to one another. Proportion is the first element in beauty.

The most prefect specimens of womanhood found by Dr. Stratz were among the Javanese. Of course these women know nothing of the refinements of modern civilisation. They never saw a corset, much less wore one. They work hard and develop their muscles in the open air. They wear no shoes, so their feet are well-formed. But it is not necessary for a woman to return to barbarism to become beautiful. There are modifications which she can easily introduce, not sacrificing even her vanity, but raising herself and her

daughters to an equality in form with the most beautiful of living women.

If a woman would make her proportion as perfect as possible, she must carry herself well. Thc best-formed women vary in height from 5 feet 1 inch to 5 feet 7 inches; in breadth of shoulders from 13·65 to 15·60 inches; waist (diameter), 7 to 9·36 inches. That is, the tall women have the larger proportions in other parts of the body.

Like all physicians, Dr. Stratz is concerned over the use of corsets; yet he is wise enough to know that he cannot stop their use. Women with poor figures will always wear corsets, but, says he, let me beg women of good form not to spoil theirs with this abomination. The inartistic effect of tight lacing lies in the wrinkled waist, flattened muscles of the back, and stomach forced forward. The tighter the corsets the greater these defects; not to

mention the deleterious effect upon the health by the constriction of the lungs and the displacement of the liver. If the corset cannot be altogether done away with its bad effects can be minimised. It should not be put on a young girl. It should be so broad as to rest on the hips, and should be buttoned on, not laced, to avoid too great pressure. It should not reach up too far, being more of a belt than a corset. By following these suggestions the bad effects of the corset would be reduced to a minimum.

One of the chief elements in beauty is the skin. The healthy woman's skin ought to be white, with a rosy glow ; a yellow or bluish tint is an indication of disease, or of anæmia, at least. The features, too, have their special proportion and shape. The beautiful mouth is well known. The defects generally lie in either too short an upper lip or too full or thin lips. Heredity

is chiefly to blame for defects here. A well-set eye adds much to the beauty of any face; it has widely-opened lids and heavy lashes. All eyes are the same size. but the large, full appearance comes from the openness of the lids—nothing else. The perfect ear is probably the rarest feature of all. Generally the ear-muscle is too largely developed. These features are difficult to influence, but the chief requirements for normal beauty of form are all within the control of mothers and daughters.

Food is an important element. Nourishing albuminous food is a necessity. Meat, eggs, and milk are best. Those who substitute potatoes and bread do so at the expense of their bodies. Every woman would like a beautiful neck and shoulders, and nothing depends more upon herself. The carriage of the body and the shape of the well-moulded neck and bust,

which are to retain their beauty almost as long as the woman lives, comes from the development of the muscles of the back, breast, and shoulders. The bust well rounded merely by accident of fat soon becomes either too fat or two skraggy. We are accustomed to think of a small hand as beautiful, yet the real beauty lies in its shape ; it should be one-ninth the height of the body. The best-shaped hand has fingers gradually decreasing in size, and well-curved nails, longer than they are broad.

The perfect foot is the rarest feature among civilised women. This is traced to faulty shoes. It is not the small foot that is beautiful, but the well-shaped foot. The second toe should extend beyond the great toe, yet tight shoes cramp it shorter. The perfect foot should have so high an instep that when set on the ground a little bird could sit under the inner side. Flat-

footedness is the ruling defect, coming often from cramping.

Let the growing maiden wear loose clothing, and be free in her movements. Let her eat nourishing food, have fresh air and plenty of sleep. Let her care for her skin by a free use of soap and water in a daily bath—the best cosmetic ever invented. If she must wear a corset, let it be low and loose, and not put it on until she is at least seventeen. Let her wear shoes that fit, with low heels. Let her get plenty of exercise in the open air. Then she will develop all of the beauty possible for her, and preserve it long.

If anyone now wishes to know exactly what her excellences and defects are, she can tell in a few minutes by glancing over this list of good and bad points.

Good Points.	Bad Points
Slender, fine bones.	Heavy thick bones.
Round Limbs.	Angular limbs.
Full breasts.	Flat breasts.
Luxuriant, long hair.	Thin, short hair.
Smooth lips.	A moustache.
Thin, soft skin.	Thick, hard skin.
Round skull.	Angular skull.
Small face.	Large face.
Large, deep eye-sockets.	Small eye-sockets.
High small eyebrows.	Lowering, bushy eyebrows.
Small lower jaw-bone.	Broad lower jaw-bone.
Even surface between cheek and neck.	Sharply separated and prominent jaw.
Rounded neck.	Bony neck, and Adam's apple.
Slender wrist.	Plump wrist.
Narrow hand with long index-finger.	Broad hand, with long right finger.
Rounded shoulders.	Bony shoulders.
Straight, small collar-bone.	Curved, thick collar bone.
Hollows over the loins.	Even over the loins.
Round, thick upper thigh.	Thin, flat thigh.
Rounded calf.	Thin calf, and angular.
Slender ankle.	Heavy ankle.
Thin foot with thin toes.	Plump, fat foot with broad toes.
Second toe long, fifth toe short.	Great toe longest, fifth toe prolonged.

CHAPTER XXIII

MODERATION THE TRUE PRINCIPLE

That exercise should always spring from, and be continued under, the influence of an active and harmonious nervous stimulus will scarcely require any additional evidence; but as the principal is not sufficiently appreciated, nor acted upon, a few remarks still seem to be called for to enforce its observance. The simple fact that the muscles are expressly constructed for the purpose of fulfilling the commands of the nervous system might of itself lead to the inference that a healthy mental stimulus ought to be considered an essential condition or a complement of exercise; and

might render us prompt to observe how easy and pleasant muscular action becomes under the influence of mental excitement. How useful a vigorous nervous impulse is in sustaining and directing it, and how difficult, wearisome, and efficient it becomes when the mind which directs it is languid or absorbed in other employments! Hence the superiority, as exercises for the young, of social and inspiring games which, by their joyous and boisterous mirth, call forth the requisite nervous stimulus to put the muscles into vigorous and varied action; and hence the utter inefficiency of the dull and monotonous daily walk which sets all physiological conditions at defiance, and in so many schools is made to supersede the exercise which it only counterfeits. Even the playful gambolling and varied movements which are so characteristic of the young of all animals, man not excepted,

and are at once so pleasing and attractive, might have taught us that activity of feeling and affection, and sprightliness of mind, are intended by nature to be the source and accompaniments of healthful and invigorating muscular exercises: and that the system of bodily confinement and mental cultivation, now so much in vogue, is calculated to inflict lasting injury on all who are subjected to its restraints.

The buoyancy of spirit and comparative independence enjoyed by boys, when out of school, prevent them from suffering under it so much as girls do; but the mischief done to both is the more unpardonable, when it does occur, because it might so easily have been entirely avoided. Even in some infant schools, where properly conducted exercise ought to be considered as a necessary of life, the principle on which I am insisting is so

little understood or valued that no Gymnasiums or football grounds have been provided, and the very best means of moral as well as physical training—play with companions—has, to the great injury of the poor children, been wholly omitted. Under judicious direction, the play-ground affords the most valuable and effective assistance to the parent and teacher, not only in eliciting the highest degree of physical health, but in developing the general character by the practical inculcation of moral principle, kindness, and affection, in the daily and hourly conduct of the children committed to their charge.

These remarks have been made in the interests of moderation, as against the extreme; and I ask that a fair trial may be given to my methods before judgment is passed; for I am fully convinced that Britishers will eventually see with me that

"APOLLO."

GEO. CROSS, Southport,
Photographer.

this is the sensible method of physical training, as it is in all other things ;—and that its acceptance will make them stronger in the true sense, because they will be healthier. Then, remembering this, let us inculcate and live up to the motto of the ancients :—

"The strength of the citizen is the strength of the state."

FINIS

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OF

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